

*Also by Brian Johnson*

The Secret War

Fly Navy

A Most Secret Place

---

Brian Johnson  
and  
H. I. Cozens

---

**BOMBERS**  
The Weapon of  
Total War

---

Thames Methuen

---



First published in Great Britain 1984  
by Methuen London Ltd  
11 New Fetter Lane, London EC4P 4EE  
in association with  
Thames Television International Ltd  
149 Tottenham Court Road  
London W1P 9LL  
Copyright © 1984 Brian Johnson and H. I. Cozens

British Library Cataloguing in Publication data:

Johnson, Brian, 1925-

Bombers  
1. Great Britain. Royal Air Force. Bomber Command  
- History 2. World War, 1939-1945 -  
Aerial operations, British  
I. Title I. Cozens, H. I.  
940.54 41 D786

ISBN 0-423-00630-4

Printed in Great Britain  
by Richard Clay (The Chaucer Press) Ltd,  
Bungay, Suffolk

## Contents

### *List of Illustrations*

### *Introduction*

**1** The Beginning 9

**2** 1918-28: The First Decade of Peace 24

**3** The Fashions of the Thirties 43

**4** The Phoenix Arises 60

**5** Wars and Rumours of Wars 76

**6** 1939-40: La Drôle de Guerre 101

**7** 1941-2: The Rise of the Night Bomber 159

**8** 1942-5: The Final Phase 186

*Index* 287

---

## List of Illustrations

---

*between pages 30 and 31*

- 1 The Avro 504s which made the first-ever strategic bombing raid, in 1914
- 2 Typical 1914–18 bomb
- 3 Zeppelin L31
- 4 Control car of a wartime Zeppelin
- 5 Garros' 1916 Morane, with centre-line gun and deflectors

*between pages 62 and 63*

- 6 Fokker Eindecker
- 7 Fokker D.VII
- 8 Handley Page 0/400
- 9 Instrument board of H.P. 0/400
- 10 Avro 504
- 11 Sopwith Snipe
- 12 D.H.9A
- 13 Vickers Vimy
- 14 Avro Aldershot
- 15 Vickers Vernon

*between pages 94 and 95*

- 16 Westland Wapiti
- 17 Junkers Ju 52 (as floatplane)
- 18 Dornier Do 17
- 19 Hawker Audax
- 20 Hawker Hart instrument panel
- 21 Handley Page Heyford I
- 22 Handley Page Harrow

- 23 Gloster Gladiators in formation  
*between pages 126 and 127*
- 24 Fairey Hendon
- 25 Armstrong Whitworth Whitley
- 26 Hampden prototype
- 27 Blackburn Skua
- 28 Fighter Control during the Battle of Britain  
*between pages 174 and 175*
- 29 Vickers Wellesley
- 30 Bristol Blenheim
- 31 Short Stirling being bombed up
- 32 Vickers Wellington
- 33 Wellington crews about to board in early 1940  
*between pages 206 and 207*
- 34 Avro Manchester
- 35 Lanc: er I
- 36 Lancaster during assembly
- 37 Mosquito being bombed up
- 38 Mosquito instrument panel
- 39 Planning meeting at 'Pathfinders' HQ
- 40 Pathfinding over Limoges, photographed from Lancaster
- 41 Navigator at work in Short Stirling
- 42 Bubble sextant  
*between pages 238 and 239*
- 43 Vickers Wellington interior ( $H_2S$  on test)
- 44  $H_2S$  display, over Holland
- 45 'Gee' ground station
- 46 Wurzburg radar in Kammhuber Line
- 47 Junkers Ju 52/3M
- 48 Junkers Ju 87 Stuka
- 49 Junkers Ju 88, examined after crashing in Britain
- 50 Ju 88G-1 in flight under British test after capture  
*between pages 270 and 271*
- 51 FW 190
- 52 Boeing B-17s being assembled at Seattle
- 53 Mutual interference of gunners in B-17s
- 54 Cockpit of B-17

## Introduction

When Air Commodore Iliffe Cozens was Station Commander of RAF Hemswell in the winter of 1943–4, he produced a 16 mm colour film titled *Night Bombers*, shot on a clockwork camera, which followed a genuine raid on Berlin, from take-off to touch-down. This remained unknown to the public until extracts were used in the BBC documentary *Bombers*.

I produced that BBC documentary, and subsequently the complete version of Iliffe's film with added sound and commentary, which is issued on Thorn-EMI video, and has been seen in its entirety on ITV.

The interest this film aroused led to our being asked to write a book; there have been many books about the strategy and effectiveness of bombing in the Second World War, but little description of what it was like to fly such raids. Air Commodore Cozens and I aimed to write a book to fill that gap, and also to trace the development of the bomber, the ultimate weapon of twentieth-century mechanised war.

Aerial bombardment has many forms; it is essentially long-range artillery and, like artillery, dependent for success on accuracy and the choice of target. The two forms of bombing which represent the final development (if one overlooks the atomic bombs of 1945) must be the brilliant role of the Luftwaffe in the two *Blitzkrieg* campaigns in Poland and France. That *tactical* bombing made such quick and, in military terms, cheap victories possible is incontestable as is the contribution which the Allied Tactical Air Forces made to the advance into Germany following the Normandy invasion in 1944.

Chronologically between the two lie the German assault on the

British Isles which began as the daylight 'Battle of Britain' and became the night '*Blitz*' of 1940–41, and the attacks on Germany, which rose to a crescendo in 1944, by the night bombers of the RAF and the daylight formations of the Eighth USAAF.

Despite the resultant destruction which, as the RAF official history admits, would have appalled Genghis Khan or Attila, the conviction of the airmen that war could be won by bombing alone was proved to be false. Bombing was claimed to be an ultimate weapon, but 'ultimate' weapons come and go and the increments of technology produce ever more horrendous means of mass destruction. For example, at the turn of this century, the 'Dreadnought' battleships were invincible, yet in their only true test, the Battle of Jutland, they were found to be flawed, and were downgraded into obsolescence by submarines and aircraft carriers. To us now, in retrospect, the bomber, or more accurately massed aerial attack by chemical (i.e. non-nuclear) bombs, appears ineffective, and impossible to justify on moral or military grounds.

Like the 'Dreadnought', the bomber is eclipsed, in this case by the intercontinental atomic missile which offers destruction on a scale that in 1940 would have been incomprehensible. If the mass attacks on civil populations – for so long predicted – are taken as its apogee, the bomber therefore had a very short operational life: from 1940 to 1945. By then the German long-range rocket, the V2, had flown, and the first atomic bombs had been dropped: the day – and night – of the bomber was over, its role eclipsed.

The story of the bomber is one of folly and great courage; of incompetence, yet of advances in the technology of aerodynamics, engines and electronics on a scale altogether without precedent. If it was not to prove a decisive weapon, its effect on twentieth-century warfare and, indeed, aviation generally, was profound.

Brian Johnson  
London, May 1984

*Night Bombers*, the video version of Iliffe Cozens' film, is available on Thorn-EMI video, TVC 90 4002 2.

## The Beginning

In the year 1670 a remarkably prescient cleric, Father Francesco de Lana-Terzi, published in his *Prodromo*, a scientific treatise, a drawing for an 'aerial ship' which, he postulated, could be used for mass bombing raids, for example on ships at sea:

... it may overset them, kill their men, burn their ships by  
... Fire and Fire balls and this they may do not only to  
Ships but to great Buildings, Castles, Cities, with such a  
security that they which cast these things down from a  
height out of Gun shot, cannot on the other side be  
offended by those from below.

That prophecy was to prove only too accurate; though the means proposed by the *padre*: a ship propelled by a sail and kept aloft by four large evacuated globes, has yet to be vindicated. De Lana-Terzi soon discovered that his aerial ship was impossible, though his pious conviction that 'God would not suffer such an invention...' was not to be fulfilled.

Disregarding early offensive balloons, de Lana-Terzi's concept had to wait for two and a half centuries for the Wright brothers to show that powered flight was a practical possibility; once that considerable hurdle had been cleared, the use of the aeroplane for military purposes took a mere further eight years, for in October 1911 an Italian, Captain Piazza, flying a Blériot from Tripoli, made the first airborne military reconnaissance trip over Turkish positions at Azzia. The feat confounded a statement made the previous year by the British Secretary of State for War that: 'We do not consider that